AP 7131

The industry's first tri-radio 802.11n access point

FEATURES

Unmatched RF performance
Conducted transmit power of 27.7dBm and superior receive sensitivity provide best in class range, coverage and application performance, even in harsh RF conditions

802.11n support with 3X3 MIMO
Delivers maximum wireless network throughput to support virtually any enterprise application, including voice and video

Band-unlocked dual band design
The ability to dedicate multiple radios to multiple functions increases security without increasing costs; band-unlocked radios enable 24x7 dual band Wireless IPS sensing on both 2.4GHz and 5GHz with concurrent 802.11a/b/g/n client access and mesh

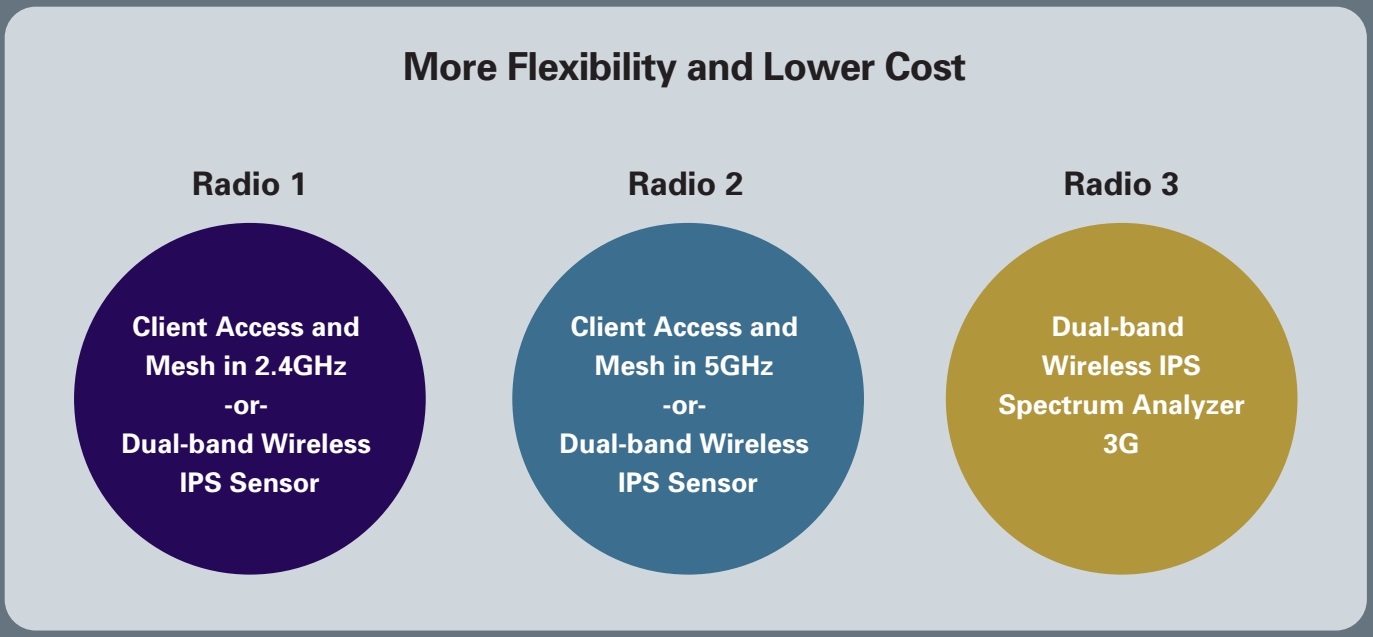
The re-defined access point: a true wired network replacement

The AP 7131 is the industry's first 802.11a/b/g/n adaptive services access point that delivers the performance, coverage, reliability and security required to enable the truly wireless enterprise. The band-unlocked tri-radio expandable design provides simultaneous support for three major networking functions: high-speed wireless data, voice and video services for client access, self-healing mesh networking and Wireless Intrusion Prevention System (IPS) sensor functionality for around the clock protection of the network. The fully DFS compliant 802.11n AP 7131 offers speeds of up to 600 Mbps per Access Point — six times the bandwidth of an 802.11a/g access point. The Adaptive Services AP architecture allows the device to offer two modes of operation, without changing the firmware — either as a stand-alone access point or as a wireless controller adopted access point for centralized management. Self-configuration in an 802.3af environment further simplifies deployment. The ability to power the radios over 802.3af eliminates the need to upgrade the existing Power-over-Ethernet (PoE) infrastructure. And the elegant industrial design with an optional snap-on antenna façade enables deployment from the warehouse to the front lobby. Packed with features, the AP 7131 offers the gap-free security and unmatched reliability you need to deploy a highly successful mobility solution at a low total cost of ownership (TCO).

Stand-alone access point: wired and wireless 'Network in a box' for smaller sites

As a stand-alone access point, the AP 7131 provides small to medium-sized businesses and enterprise branch offices with a consolidated wired and wireless networking infrastructure, all in a single device. The integrated router gateway, 3G WAN backhaul, firewall, DHCP and AAA Radius servers, IPSec VPN, hot-spot gateway and PoE simplify and reduce the costs associated with networking by eliminating the need to purchase and manage multiple pieces of equipment.

Figure1: Motorola AP 7131 with Band-Unlocked Radios


More Flexibility and Lower Cost
Radio 1
Client Access and Mesh in 2.4GHz -or- Dual-band Wireless IPS Sensor
Radio 2
Client Access and Mesh in 5GHz -or- Dual-band Wireless IPS Sensor
Radio 3
Dual-band Wireless IPS Spectrum Analyzer 3G

With three band-unlocked radios in a single access point, wireless traffic can be segmented as needed between two radios to ensure performance levels for wireless access and backhaul, while the third radio can provide around-the-clock dedicated dual-band sensing. The need to purchase, power and manage dedicated sensors is eliminated — an estimated savings of $300-$400 per sensor — providing the highest level of security for the wireless LAN at the lowest possible cost.

Gap-free dedicated 24x7 sensing via triple methodology rogue AP detection: on-channel, mobile unit and dedicated radio dual-band scanning
Around the clock network protection through instant rogue detection

Spectrum Analysis
The ability to place a remote AP-7131 in Spectrum Analysis mode allows remote identification of local RF interference, enabling remote troubleshooting and issue resolution from the Network Operation Center (NOC) or other centralized location

Adaptive AP: extending the enterprise
Enables centralized management of mesh access points at remote sites including automatic firmware upgrades; provides site survivability for remote locations with 802.11a/b/g/n networks for unparalleled resiliency

Centrally managed access point: Adaptive AP Mode

The AP 7131 is designed to cost-effectively meet the needs of large, distributed enterprises by converging the functionality of a thick access point and thin access port into a single device. Adaptive mode enables the deployment of a fully featured intelligent access point that can be centrally configured and managed via a Motorola wireless controller in either corporate headquarters or a NOC. All traffic between the adaptive access points and the wireless controller is secured through an encrypted tunnel. And in the event of a WAN, distribution or core network failure, this fully independent configuration offers a remote site survivability that enables the delivery of secure uninterrupted wireless service in the remote location, offering unparalleled network resiliency.

Gap-free security

To achieve true gap-free security, you need gap-free rogue detection, requiring dedicated dual-band sensing of 2.4GHz and 5GHz wireless LANs — typically provided by a stand-alone sensor. The AP 7131 is the first a/b/g/n access point to offer concurrent around-the-clock dual-band sensing and wireless traffic — eliminating the need for separate devices. Integrated Wireless IPS sensor firmware enables the configuration of one radio for 24x7 rogue detection and termination, and two others can simultaneously be dedicated to wireless client access and/or meshing. As a result, enterprises can now deploy the most robust Wireless IPS solution while saving money — the cost to purchase, deploy and manage dedicated sensor hardware is eliminated.

In addition, stateful firewall, encryption and authentication support key standards-based security protocols that ensure enterprise-level protection for the wired and wireless network infrastructure. The powerful feature set enables security to be administered by either local, non-technical staff or remote IT professionals at your headquarters.

Mesh: cost-effective networking for challenging locations

Mesh functionality enables the cost-effective wireless extension of the enterprise network to areas where Ethernet or fiber cabling is cost-prohibitive or otherwise impractical. Mesh functionality includes multi-node, multi-link networks as well as simple mesh to connect two wired networks. Self-healing mesh ensures continuity of service in the event of a wired or wireless network failure. The self-forming, highly resilient VLAN and WMM QoS-aware mesh technology enables organizations to wirelessly extend reliable high-performance voice, data and video services to workers in remote and outdoor locations.

Key ingredients: WLAN design, management and security

Motorola provides full life-cycle support for your 802.11n deployment. Motorola's LANPlanner is a powerful predictive planning tool that enables the easy creation of a well-designed 802.11n wireless LAN that is tailored for your selected applications, eliminating the high cost associated with an iterative trial-and-error approach and multiple site surveys. For the operational phase, Motorola AirDefense solutions provide infrastructure management, network assurance and security & compliance on a single efficient services platform. Motorola Professional Services offer expertise to assist with assessment through implementation of your mobility solution. Once your Motorola mobility solution is deployed, our responsive Customer Services keep your solution up and running, with maximum uptime — reducing your total cost of ownership.

Enterprise-class manageability — and a rapid return on investment

You can count on this multi-function multi-purpose device to deliver a rapid return on investment. The AP 7131 can be deployed as a stand-alone or centrally managed device to provide wireless voice, data and video services, mesh backhaul and Wireless IPS sensor functionality, all in one device. This built-in flexibility simplifies the mobility architecture — there is less equipment to purchase and manage, reducing your capital and operational expenditures. Special features, such as spectrum analysis, allow you to easily and remotely manage and troubleshoot distributed networks. Additionally, with Motorola's AirDefense Service Platform (ADSP), you enjoy unified security and management of all your AP 7131 access points, enabling simplified, cost-effective planning, deployment and monitoring of large AP 7131 networks.

For more information on how your enterprise can benefit from the AP 7131, please visit us on the web at motorola.com/wlan or access our global contact directory at motorola.com/enterprisemobility/contactus

802.3af dual-radio support
Standard Power-over-Ethernet (PoE) provides power for both radios. Intelligent power management enables self-configuration based on available power. Eliminates the need to upgrade the PoE infrastructure

Integrated router, DHCP server, stateful packet inspection firewall, AAA server, NAT, and hotspot gateway
Eliminates need to purchase and manage additional equipment. Simplifies provisioning of network services and public access

Mesh networking
Allows wireless extension of existing wired or wireless networks in remote or outdoor locations

802.11i, WPA2, WPA and IPSec encryption
End-to-end enterprise class wired and wireless security

3G WAN backhaul
Rapid network deployment with extended WAN connectivity over 3G. Provide 3G fail-over support for maximum remote site survivability.

AP 7131 Specifications

802.11n Capabilities

- 3X3 MIMO with 2 Spatial Streams
- 20 MHz and 40 MHz Channels
- 300 Mbps Data Rates per Radio
- Packet Aggregation (AMSDU, AMPDU)
- Reduced Interframe Spacing
- 802.11 DFS
- MIMO Power Save (Static and Dynamic)

Performance Characteristics

Dimensions:	AP 7131:	5.50 in. L x 8.00 in. W x 1.10 in. H 13.97 cm L x 20.32 cm W x 2.79 cm H
	AP 7131N:	5.50 in. L x 8.00 in. W x 1.5 in. H 13.97 cm L x 20.32 cm W x 3.81 cm H
Weight:	AP 7131: 2.33 lbs/1.06 kg AP 7131N: 2.67 lbs/1.21 kg	
Housing:	Metal, plenum-rated housing (UL2043)	
Available mounting:	No additional hardware required to mount	
Configurations:	Above drop ceiling, under ceiling or on wall	
LEDs:	6 top mounted LEDs, 1 bottom mounted LED, with multiple modes indicating 802.11a/g/n activity, power, Ethernet adoption, Wireless IPS and errors	
Uplink:	2 ports (GE1, GE2) Auto-sensing 10/100/1000 Base-T Ethernet; 802.3af on GE1 LAN port	
Antenna connectors:	RP-SMA	
Console port:	RJ45 Console Port	

User Environment

Operating Temperature:	-4°F to 122°F/-20°C to 50°C
Storage Temperature:	-40°F to 158°F/-40°C to 70°C
Operating humidity:	5 to 95% RH non-condensing
Operating altitude:	8000 ft./2438 m @ 82°F/28°C
Storage altitude:	15000 ft./4572 m @ 53°F/12°C
Electrostatic discharge:	15kV air, 8kV contact

Power Specifications

Operating voltage:	36-57VDC
Operating current:	Not to exceed 600mA @ 48VDC
Integrated PoE support:	802.3af support for dual radios, 802.3at (draft)

Networking Specifications

Layer 2 and Layer 3:	Layer 3 routing, 802.1q, DynDNS, DHCP server/client, BOOTP client, PPPoE, and LLDP
Security:	Stateful Firewall, IP filtering, NAT, 802.1x, 802.11i, WPA2, WPA Triple-Methodology Rogue Detection: 24x7 dual-band WIPS sensing, MU-assisted, on-board IDS and secure guest access (HotSpot)
Quality of Service (QoS):	WMM, WMM-UAPSD, 802.1p, Diffserv and TOS

Radio Specifications		
Wireless medium:	Direct Sequence Spread Spectrum (DSSS), Orthogonal Frequency Division Multiplexing (OFDM) and Spatial multiplexing (MIMO)	
Network standards:	IEEE 802.11a/b/g/n, 802.11d and 802.11i WPA2, WMM and WMM-UAPSD	
Data rates supported:	802.11b/g: 1,2,5.5,11,6,9,12,18,24,36,48, and 54Mbps 802.11a: 6,9,12,18,24,36,48, and 54Mbps 802.11n: MCS 0-15 up to 300Mbps	
Operating channels:	All channels from 4920 MHz to 5825 MHz Chan 1-13 (2412-2472 MHz) Chan 14 (2484 MHz) Japan only Actual operating frequencies depend on regulatory rules and certification agency	
	AP 7131N	**AP 7131**
Maximum available transmit power per chain:	23 dBm	20 dBm
Maximum available transmit power per AP:	27.7 dBm	24.5 dBm
Antenna configuration:	3x3 MIMO (transmit/receive on all three antennas)	
Transmit power adjustment:	1dB increments	
Operating bands:		
FCC	**EU**	**Japan**
2.412 to 2.462 GHz	2.412 to 2.472 GHz	2.412 to 2.484GHz
5.150 to 5.250 (UNII -1)	5.150 to 5.250 GHz	4.900 to 5.000 GHz
5.250 to 5.350 (UNII -2)	5.250 to 5.350 GHz	5.150 to 5.250 GHz (W52)
5.470 to 5.725 (UNII -3)	5.470 to 5.725 GHz	5.250 to 5.350 GHz (W53)
5.725 to 5.850 (ISM)	(Country Specific)	5.470 to 5.725 GHz (W56)

Regulatory	
Product safety certifications:	UL / cUL 60950-1, IEC / EN60950-1, UL2043, RoHS
Radio approvals:	FCC (USA), Industry Canada, CE (Europe), TELEC (Japan), China, Korea, Australia, Brazil

Part Numbers	
AP-7131N-66S70-WR	Tri-Radio 802.11n Adaptive Services Access Point, with QIG*
AP-7131N-66S78-WW	Tri-Radio 802.11n Adaptive Services Access Point, 6 element Façade antenna module, with QIG*
AP-7131N-66S70-US	Tri-Radio 802.11n Adaptive Services Access Point, with QIG
AP-7131N-66S78-US	Tri-Radio 802.11n Adaptive Services Access Point, 6 element Façade antenna module, with QIG
AP-7131N-66E40-WR	Dual Radio 802.11n Adaptive Services Access Point with integrated ExpressCard Slot, with QIG*
AP-7131N-66E48-WW	Dual Radio 802.11n Adaptive Services Access Point with integrated ExpressCard Slot, 6 element Façade antenna module, with QIG*
AP-7131N-66E40-US	Dual Radio 802.11n Adaptive Services Access Point with integrated ExpressCard Slot, with QIG
AP-7131N-66E48-US	Dual Radio 802.11n Adaptive Services Access Point with integrated ExpressCard Slot, 6 element Façade antenna module, with QIG
AP-7131-66040-WR	AP-7131 Dual Radio 802.11n Access Point, Plastic Façade, with QIG
AP-7131-66048-WR	APN Dual Radio 802.11n Access Point, 6 element Façade antenna Module, with QIG
AP-7131-60020-WR	AP 7131 Single Radio 802.11n Access Point, Plastic Façade, with QIG
AP-7131-60028-WR	AP 7131 Single Radio 802.11n Access Point, 6 element Façade antenna Module, with QIG
AP-7131-60020-D-WR	APN Single Radio 802.11n Access Point Dependent Mode
AP-7131-66040-D-WR	APN Dual Radio 802.11n Access Point Dependent Mode
SNB-7120FL-P-1	AP 7131 Single-Radio Remote 11n Sensor (external antenna) with Full WIPS license
SNB-7128FL-P-1	AP 7131 Single-Radio Remote 11n Sensor (integrated antenna) with Full WIPS license
SNB-7140FL-P-1	AP 7131 Dual-Radio Remote 11n Sensor (external antenna) with Full WIPS license
SNB-7148FL-P-1	AP 7131 Dual-Radio Remote 11n Sensor (integrated antenna) with Full WIPS license
50-14000-247R	AP 7131 Power Supply
AP-PSBIAS-1P3-AFR	Single Port High Power 802.3at (Draft) Power Injector
ML-2452-PTA3M3-036	3 Port MIMO Antenna
ML-2452-PTA2M3X3-1	Façade with 6 element antenna Module
KT-135628-01	AP 7131 mounting kit (optional)
M25.90001.001	Plastic façade cover for AP 7131

* Cannot be ordered in the US

Wi-Fi Multimedia (WMM™), Quality of Service (QoS) and voice prioritization
Superior performance for demanding mission critical applications, including voice and video

MU Rate Limiting
Allows client-based control of bandwidth, preventing any single user from impacting network availability

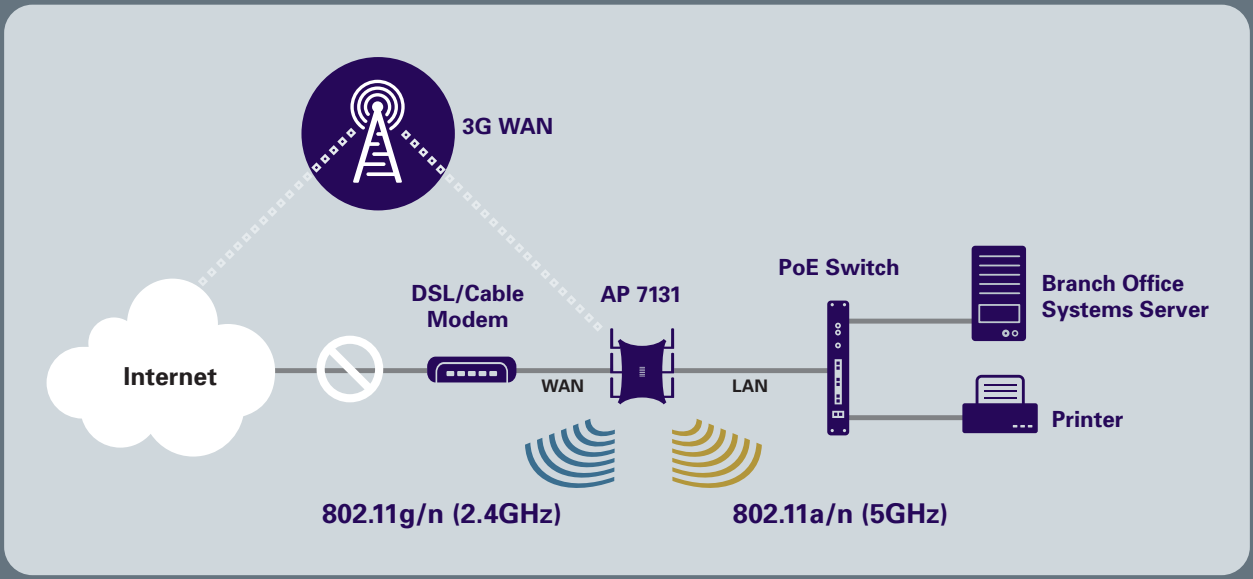
WAN and LAN Ethernet ports
Single device solution for both wired and wireless networking

Java™ web-based graphical user interface; SNMPv3; command line interface (CLI)
Flexible management options; easy-to-use "anytime, anywhere" management

Integrated VPN
Cost-effective secure site-to-site communications

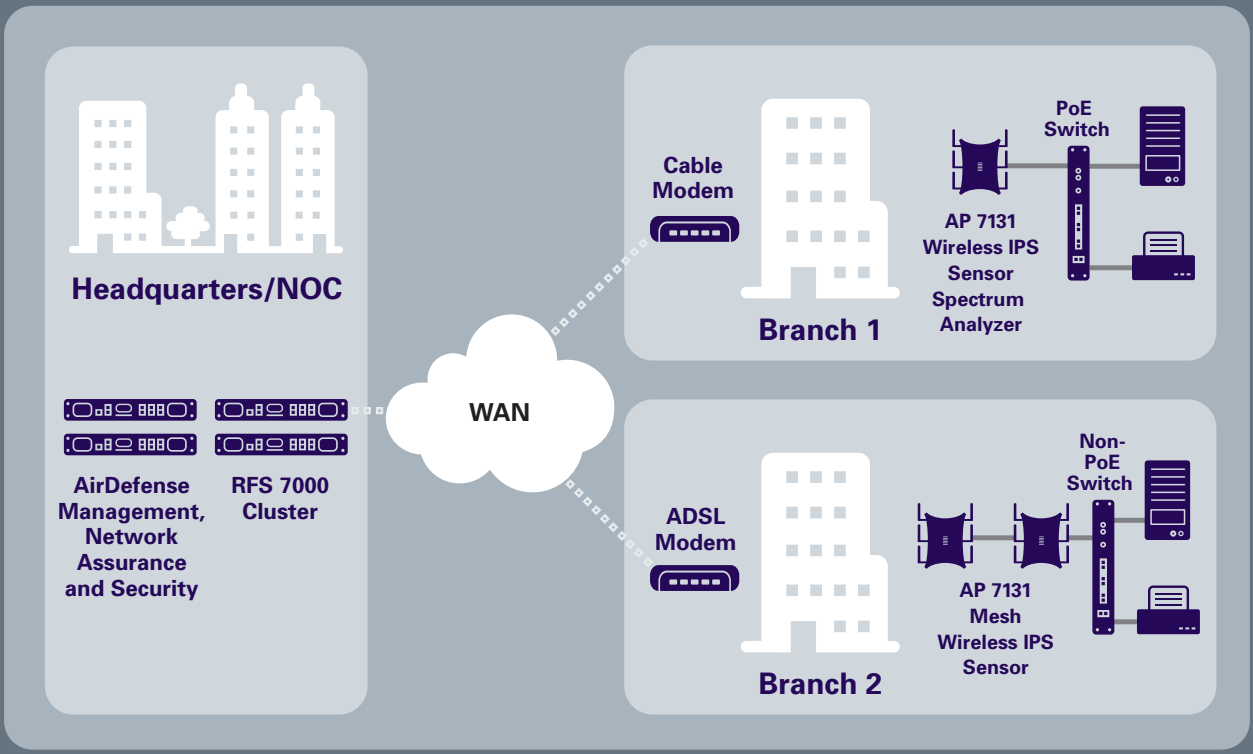
DFS compliance
Increased throughput through greater channel availability in the 5 GHz bands

Figure 2: AP 7131 for the Small/Medium Enterprise (SME)



The diagram above illustrates the AP 7131 in action in small and medium-size enterprises, able to provide wireless connectivity for all clients (including .11n) as well as a redundant 3G WAN network connection, ensuring continuity of business and protecting customer service levels despite network outages.

Figure 3: AP 7131 for the Distributed Enterprise



The versatile AP 7131 also plays a crucial role in large distributed enterprises. When deployed in adaptive AP mode, this fully featured intelligent access point can be centrally configured and managed via a Motorola wireless controller in either corporate headquarters or a network operations center (NOC). Yet in the event of a WAN, distribution or core network failure, the remote site survivability feature enables the AP 7131 to revert to stand-alone mode, ensuring the delivery of secure uninterrupted wireless service in remote locations, providing unparalleled network resiliency.

SPECIFICATION SHEET

AP 7131
The industry's first 802.11n access point with tri-radio design

AP 7131 MODELS

AP 7131 Tri-Radio

AP 7131 Dual-Radio with Express Card Slot

AP 7131 Dual Radio

AP 7131 Single Radio (shown without façade)

Receiver Sensitivity: Operating Band 2.4GHz

Operating Modes	Data Rate	Typical Receive Sensitivity (dBm) AP 7131N Radios 1 and 2	AP 7131
802.11b	1 Mb/s	-96	-92
	2 Mb/s	-94	-91
	5.5 Mb/s	-93	-89
	11 Mb/s	-90	-87
802.11g	6 Mb/s	-94	-90
	9 Mb/s	-94	-90
	12 Mb/s	-95	-90
	18 Mb/s	-94	-88
	24 Mb/s	-90	-86
	36 Mb/s	-87	-82
	48 Mb/s	-83	-78
	54 Mb/s	-82	-77
802.11n (HT20)	MCS0	-95	-90
	MCS1	-93	-88
	MCS2	-91	-85
	MCS3	-87	-82
	MCS4	-85	-79
	MCS5	-81	-76
	MCS6	-79	-74
	MCS7	-78	-72
	MCS8	-94	-89
	MCS9	-91	-86
	MCS10	-88	-82
	MCS11	-85	-80
	MCS12	-82	-77
	MCS13	-79	-73
	MCS14	-77	-71
	MCS15	-75	-69
802.11n (HT40)	MCS0	-90	-83
	MCS1	-89	-81
	MCS2	-87	-77
	MCS3	-84	-76
	MCS4	-82	-71
	MCS5	-78	-69
	MCS6	-76	-66
	MCS7	-75	-64
	MCS8	-87	-83
	MCS9	-87	-80
	MCS10	-85	-77
	MCS11	-83	-76
	MCS12	-80	-70
	MCS13	-75	-69
	MCS14	-74	-66
	MCS15	-72	-62

Receiver Sensitivity: Operating Band 5GHz

Operating Modes	Data Rate	Typical Receive Sensitivity (dBm) AP 7131N Radios 1 and 2	AP 7131
802.11a	6 Mb/s	-93	-89
	9 Mb/s	-93	-90
	12 Mb/s	-93	-89
	18 Mb/s	-92	-88
	24 Mb/s	-89	-85
	36 Mb/s	-86	-82
	48 Mb/s	-82	-78
	54 Mb/s	-80	-76
802.11n (HT20)	MCS0	-93	-89
	MCS1	-92	-88
	MCS2	-90	-86
	MCS3	-86	-83
	MCS4	-83	-79
	MCS5	-79	-75
	MCS6	-78	-74
	MCS7	-76	-72
	MCS8	-92	-88
	MCS9	-90	-86
	MCS10	-87	-83
	MCS11	-84	-81
	MCS12	-81	-77
	MCS13	-77	-73
	MCS14	-75	-71
	MCS15	-73	-69
802.11n (HT40)	MCS0	-90	-86
	MCS1	-89	-84
	MCS2	-86	-82
	MCS3	-83	-79
	MCS4	-80	-76
	MCS5	-76	-72
	MCS6	-74	-70
	MCS7	-73	-68
	MCS8	-89	-85
	MCS9	-86	-83
	MCS10	-84	-79
	MCS11	-81	-77
	MCS12	-78	-74
	MCS13	-74	-69
	MCS14	-72	-68
	MCS15	-71	-66

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